DOCUMENT RESUME

ED 194 876 CS 005 720

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TITLE Comprehension Strategies of Proficient Elementary Readers.
PUB DATE [78]
NOTE 41p.: Research prepared at the University of Alberta.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Elementary Education: Grade 4: *High Achievement: Psycholinguistics: *Reading Achievement: *Reading Comprehension: *Reading Processes: *Reading Research: Reading Skills

ABSTRACT

A study was conducted to examine the comprehension process of ten proficient fourth grade readers as they read a story within a particular instructional environment. The instructional environment was designed to provide for background experiences, purpose for reading, and purposeful feedback. Results indicated that the subjects constructed a great deal of the meaning that they derived from the story. They used the information in the story, their purposes for reading, and pertinent background in order to predict and infer. They remade the meaning of the story, rather than taking on the meaning of the story. Two groups were found within the subjects, one that made inferences while reading and one that made both inferences and predictions. (MKM)

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Comprehension Strategies of Proficient Elementary Readers

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NOTE

Sincere thanks is extended to Dr. David Dillon of the University of Alberta for many valuable contributions to the planning and writing of this research.

Comprehension Strategies of Proficient Elementary Readers

Comprehension of reading material has always been a major concern of reading educators. However, only with the dissemination of findings of psycholinguistic research has greater insight been provided into the actual process of comprehending and a more factual base established from which to draw implications for reading theory, instruction and research.

Review of Literature

The findings of psycholinguistic research have provided a general framework of the comprehension process in reading. The major tenet of this framework is that the reader is at the center of the reading process. In the same way that the reader seeks meaning in daily encounters with the world, he/she attempts to make sense of what he/she reads (Smith, Goodman, and Meredith, 1976; Smith, 1971, 1975). In order for a passage to be meaningful, the reader must be able to relate it to personal linguistic and experiential background since the reader can comprehend only in relation to what he/she knows (Britton, 1970; Piaget and Inhelder, 1959; Lee and Allen, 1963; Anderson, Reynolds, Schallert and Goetz, 1977; Smith, 1975). To be purposeful, a reading experience must arise from the interests and needs of the reader and serve as a means to ends which he/she perceives as valuable. For example, the reader reads to answer a personally based question, to decide among alternatives, to experience another place or time (Halliday, 1969, 1973, 1975; Goodman and Goodman, 1976; Clay, 1972, 1975; Durkin, 1966; Torrey, 1969; Doake, 1978). If the reading experience is linked

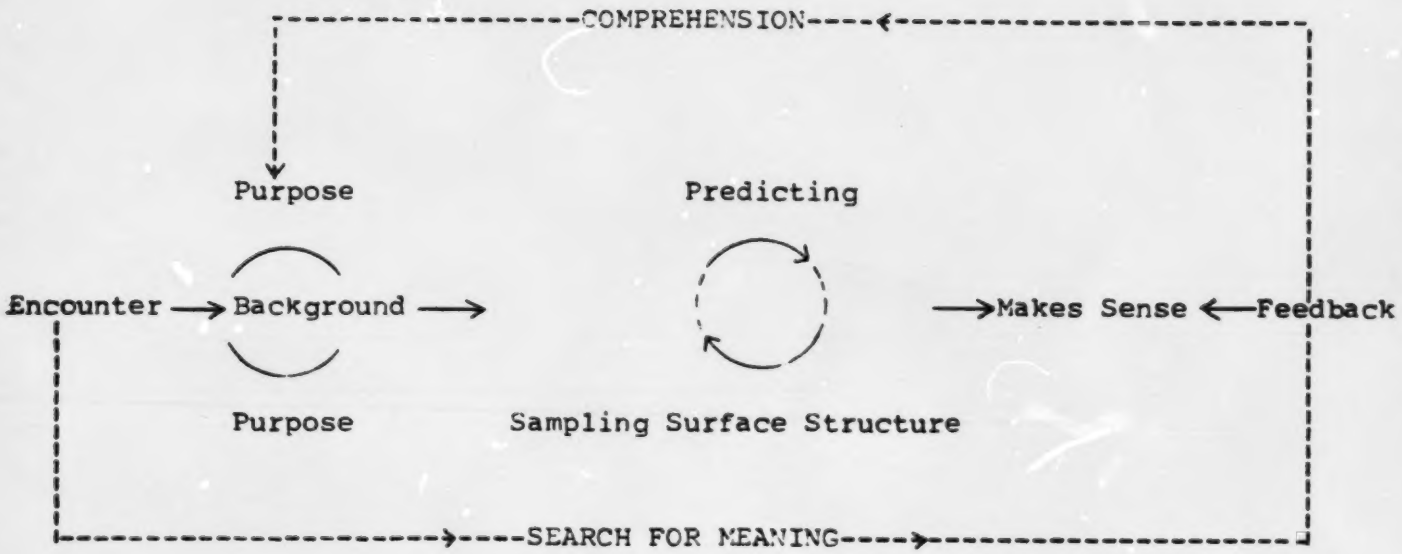
to the reader's background and interests, and if the language is whole natural discourse, then the text is usually highly predictable (Smith, 1975; Goodman, 1973; Stauffer, 1969; Smith and Holmes 1971). Within this meaningful, purposeful, and therefore, predictable context, the reader samples just enough print information to confirm or revise his expectations (Goodman and Niles, 1970; Smith, 1975). During and after reading, the reader meditates, providing feedback to the comprehension process. After reading, he/she can also receive formal or informal feedback from others (Moffett and Wagner, 1976; Spache, 1976). The feedback may help the reader evaluate the effectiveness of his/her comprehension and may lead to re-reading, further reading, or some personal artistic or linguistic expression. The process may be depicted graphically, as in Figure 1.

Purpose of the Study

Given the general nature of the comprehension process, the purpose of this study was to observe the specific strategies proficient readers use to comprehend a story which they read within a particular instructional environment. An instructional environment was created as the context for this study because such an environment could be more conducive to the "natural" comprehension process than a laboratory environment. Therefore, an instructional plan was developed which was designed to provide for (a) background experiences, which the child could relate to the story-reading experience, (b) purpose for reading, which the child could create, and (c) purposeful feedback, so that the

Figure 1

Reading Comprehension



child could receive input regarding the effectiveness of his/her comprehension.

Research Question

What comprehension strategies do fourth grade proficient readers use when reading a story which they encounter within an instructional environment designed to be conducive to the comprehension process?

Plan of the Study

Selection of Subjects

Of a regular classroom of subjects provided for the study, 10 satisfied the requirement of proficient readers, i.e., they had achieved above the 75th percentile on the comprehension subtest of the Edmonton Public School Board Standardized Achievement Test administered to them in Grade 3. Since all children were accustomed to working as a total group, the class participated in the instructional plan within which the comprehension process was to be studied. However, only the 10 proficient readers were included in the data gathering as subjects of the study.

Grade 4 children were chosen because they were considered more articulate than younger children and their ability to verbalize their thoughts was an important part of the study as is explained later. In addition, the researcher had taught children at this level but had minimal experience with older children.

The Instructional Plan

An instructional environment was created as the setting for this study because the researcher's purpose was to observe the

reading process as it occured within a context that was familiar to the subjects. Therefore, the basic structure of the instructional plan provided for: (a) encounter with a question, problem, etc. which could lead to (b) a purpose for reading, followed by (c) various means of inquiry including the actual reading and (d) the use of information gained in reading to provide feedback to the reader. These four principles were embodied in the content area of social studies in a unit about the pioneers of Alberta, suggested in the Alberta provincial curriculum for Grade 4 (1978). The central question of the plan was "What would life be like for me if I were a pioneer child in Alberta?" The use of the content area of social studies for this reading study was a direct outcome of a tenet of the theoretical framework: children learn to read by reading to learn.

In order to meet some of the requirements of the theoretical framework, such as reading as a purposeful endeavor, the children were actively involved in the planning. Thus, after a teacher-determined and teacher-initiated start to the plan, specific activities at various stages of the plan were not stipulated by the teacher. Rather the teacher developed suggestions for possible use at various stages in the instructional plan. Suggestions made by the children during the course of the study were implemented instead of, or along with, these possibilities. In other words, the children were encouraged to direct their own learning in conjunction with the teacher's planning.

Procedures for Observing Comprehension Strategies

Because the comprehension process is unobserveable, comprehension strategies must by inferred through observation of the behavior of readers when reading and interaction with them following reading. Two procedures for observing comprehension strategies were useful within this framework.

1. Olshavsky (1976) used protocol analysis as a means of relating interest, abstractness of concepts and reader proficiency to the repertoire of strategies used by Grade 10 readers to comprehend a short story. Each subject was asked to stop their silent reading a paragraph where red dots had been inserted (at the end of each independent clause) and to verbalize his/her thoughts.

2. Goodman and Burke (1972) advocate unaided recall (after reading)to determine the effectiveness of a reader's comprehension by asking him/her to reconstruct the author's message in his/her own words. The unaided recall technique also includes probing questions by the researcher using only those names or events to which the reader has already referred. Thus, unaided recall reveals how well a reader comprehends a passage. Also, the way the reader reconstructs the passage (e.g., time sequence and the inclusion or omission of various details) and the way he/she answers questions, provide clues to his/her comprehension strategies. Unaided recall was not used by Goodman and Burke for this purpose but was adapted for such a purpose in this study.

These two procedures do not impose structures such as

specific content questions, or strategies such as "What do you think will happen next?" on the reader's thought processes. The reader simply verbalizes thoughts during and after reading a passage. Thus, the data reveal, to a certain extent, how the reader actively structures his/her own comprehension.

Procedures for Data Gathering

Choice of Text

The text chosen for protocol analysis and unaided recall included the final two chapters in Farmer Boy (Wilder, 1933), "Mr. Thompson's Pocketbook" and "Farmer Boy". This text was chosen on the basis of Fry's Readability Scale (1967) which placed readability at fourth grade after the criterion of a realistic pioneer story was satisfied.

Literary discourse in story format was chosen as the type of passage to be read by the children since this was the type of language function and task that children would certainly have had experience with in school by Grade 4. Familiarity with language function and task was an important criterion since the study was designed to investigate reader's comprehension strategies, especially as they relate to elements of discourse structure. Thus, ensuring that the type of discourse encountered by the children was familiar to them was necessary so that results would not be unduly affected by their lack of knowledge of the discourse structure in the passage to be read.

Most important, by this point in the inquiry the children wanted to read a realistic account to find out more about pioneer life; therefore, the teacher-selected text was appropriate. In

short, Farmer Boy, served as purposeful reading, thus fulfilling one of the characteristics of the comprehension process.

Placement of Red Dots

Red dots, to indicate points where subjects were to stop and verbalize their thoughts during the reading, were placed at 19 intervals in the story as dictated by the structure of the discourse rather than at the end of each independent clause as Olshavsky (1976) had done. Larger structural divisions were chosen because they could provide opportunities for achieving the researcher's purpose without unduly segmenting the story. Thus, a dot was placed at a change of setting or episode, at a point which introduced or added an element of conflict, and at a moment of climax or conflict resolution.

Pilot Study

A group reading and discussion experience served as a pilot for the individual protocol analysis research. The researcher asked the children to read a story silently until they encountered a red dot, then stop reading and share aloud what they were reading. The story chosen for this purpose was "Birthday", a chapter from Farmer Boy (Wilder, 1933).

The pilot experience indicated that the instructions were clear and that the subjects were able to verbalize a good deal of their thoughts. Thus, protocol analysis appeared to be a procedure which could provide some insight into the comprehension process.

Findings

After the data were examined, categories of protocols, or comprehension strategies, were developed to represent the information gathered. Each response given by a subject at a red dot was considered a unit. Two, and (rarely) three strategies were evident in some units. However, one unit was usually characterized by one strategy.

Definition of Categories

Category A responses were those in which subjects extended beyond information provided in the story, except where subjects' responses were related to their purpose for reading (Category B). Since purpose for reading is a major aspect of the model of reading upon which this study is based, such responses were kept in the second category.

A1. Factual speculation concerning information other than pioneer life. Subjects speculated about information not included in the story on the basis of facts presented.

e.g., I was wondering why Almanzo didn't hit Mr. Thompson when he called him a thief.

A2. Inferring. Subjects drew conclusions about character emotions and attitudes on the basis of dialogue and/or action. At times, personal identification with a character was evident in relation to story elements other than the pioneer theme.

e.g., I think that Almanzo is--that his father trusts Almanzo a lot, that he's giving him the choice of what he wants--that he's letting him pick what he wants to be.

A3. Asking a question. Subjects indicated they were thinking ahead by asking open-ended questions which focused on major action at that point in the story.

e.g., I wondered what Almanzo is going to do when his dad said he could keep the money.

Category B responses were those in which subjects related story information to their purpose for reading. The central question of the unit was "What would life be like for me if I were a pioneer child in Alberta?" This purpose was reflected when subjects considered what life would have been like for them if they were pioneer children. As stated earlier, Category B is a particular instance of Category A.

B1. Identification with a character. Subjects expressed personal identification with a character which would require them to return to pioneer times to fulfill.

e.g., Well, I think it would be fun working a haypress. I think Almanzo was really having fun working the haypress.

B2. Identification with a situation. Subjects expressed personal identification with a situation which would require them to return to pioneer times to fulfill.

e.g., In the last paragraph, well, "the air was clean and cold and the the sky was blue and all the snowy fields were sparkling." What it was like, well, I would like to be there to see because it sounds so pretty.

B3. Factual speculation concerning pioneer life. Subjects speculated about at pioneer life was like on the basis of facts presented in the story.

e.g., I'm wondering if they have just about the same food every night.

Category C responses were those in which subjects related personal and instructional experiences to story information as rationale for predicting (D1) and inferring (A2) responses. Subjects used Category C only for these purposes. Once again, it was included as a separate category because of its importance in the model of reading used in this study.

C1. Using personal background. Subjects related experiences not provided for in the instructional setting. C1 is underlined in the example.

e.g., Well, I bet Almanzo's mother isn't gonna like it, you know. Her son would have to go to school, you know - what he hates just like what people in our school hate - going to school. I think he might get the job - might not get the job, I should say.

C2. Using instructional background. Subjects related experiences provided for in the instructional setting. C2 is underlined in the example.

e.g., Almanzo must have been really mad at Mr. Thompson - Otherwise he wouldn't have given the nickel back because a nickel meant quite a lot.

(The different value of money in pioneer times was discussed during the unit.)

Category D responses were those in which subjects reduced the alternatives for continued story action to one or two.

D1. Predicting. Subjects suggested possible plot sequences.

e.g., O boy! He's just said, "Hand him $200." And he's rather scared 'cause Mr. Paddock's probably bigger than he is--he's probably going to give--he's probably going to get $200--'cause he doesn't want to suffer the consequences.

D2. Revising a prediction. Subjects referred to a previous prediction and changed it.

e.g., Well, I guess I take--I kind of take back what I said about him not doing it very well 'cause he seems to be doing it pretty good. I think he'd make a good hay-baler so Mr. Weed's going to offer him a job or something.

D3. Confirming a prediction. Subjects affirmed that a prediction made earlier was correct.

e.g., Well, when I read this over, it said um he was wondering if he could--if he had enough money bo buy a little colt and that's exactly what I said before so I wonder what he'll get next.

Category E responses were those in which subjects retold information from the story as their only strategy at that point. This category does not include those frequent instances when subjects retold information in the passage as a basis for their primary strategy (see examples for A1, A2, A3, B1, B2, B3, D1, and D3).

e.g., They asked Mr. Thompson if he had lost his pocketbook.

Category F responses were those in which the subjects indicated they did not understand what something was or why something was done.

e.g., Through all these paragraphs, I was thinking what a

wheelright is.

One independent judge determined reliability of response categorization at .89 according to the Fiefel-Lorge formula (Fiefel and Lorge, 1952). In summary, the following categories of comprehension strategies were identified from the subjects' protocols.

Category A: Extending beyond given information

A1 Factual speculation concerning information other than pioneer life.

A2 Inferring

A3 Asking a Question

Category B: Relating story information to purpose for reading

B1 Identification with character

B2 Identification with situation

B3 Factual speculation concerning pioneer life

Category C: Using background knowledge for comprehension

C1 Using personal experience

C2 Using instructional experience

Category D: Reducing alternatives for continued story action

D1 Predicting

D2 Revising a prediction

D3 Confirming a prediction

Category E: Retelling

Category F: Failing to comprehend

Tabulation of Responses

Table 1 indicates the percentage use of categories and sub-categories by each subject in protocol analysis.

Percentage totals for each category indicates that the most frequently used strategy was Category A-Extending beyond given information, which accounted for 45% of the responses. The related response, Category B-Relating story information to purpose for reading, accounted for another 11% of the responses, making the total inference percentage 56%. The next most frequently used strategy was Category D-Reducing alternatives for continued story action, which was used 26% of the time.

Category C-Using background knowledge for comprehension, i.e., as a rationale for Category D1-Predicting, or Category A2-Inferring responses, was used 12% of the time. The low percentage of responses in Category C indicates that background experiences were not always stated by a reader even though they are logically essential as a rationale for predicting. Perhaps, experiences that have been internalized to the extent that they are part of the way the reader views the world are not available at a conscious verbal level.

Category F-Failing to comprehend, also accounted for 3% of the responses. The low incidence of Category F may be related to the choice of a story on the basis of a suitable readability level coupled with experiences, both personal and instructional,

Table 1

Approximate Percentage Use of Response Categories by Each Subject in Protocol Analysis

Category	Subject 1	2	3	4	5	6	7	8	9	10	Percentage of Total Responses
A. Extending Beyond Given Information											
A1. Factual Speculation	15	27	5	16	0	15	26	0	8	24	14
A2. Inferring	38	34	14	12	68	30	11	38	21	19	26
A3. Asking a Question	0	0	24	12	0	0	11	0	3	0	5
Total A	53	61	43	40	68	45	48	38	32	43	45
B. Purpose for Reading											
B1. Identification with Character	4	0	0	0	13	10	0	0	3	0	3
B2. Identification with Situation	4	0	5	16	0	0	0	0	0	0	3
B3. Factual Speculation	4	6	9	0	0	0	16	0	0	13	5
Total B	12	6	14	16	13	10	16	0	3	13	11

C. Using Background Information											
C1. Personal Background	12	0	5	4	0	0	0	28	11	6	7
C2. Instructional Background	0	0	0	0	0	25	0	0	11	9	5
Total C	12	0	5	4	0	25	0	28	22	15	12
D. Reducing Alternatives for Continued Story Action											
D1. Predicting	15	6	29	36	6	20	31	23	32	25	24
D2. Revising a Prediction	0	0	0	0	0	0	0	3	8	0	1
D3. Confirming a Prediction	0	0	0	4	0	0	0	4	3	0	1
Total D	15	6	29	40	6	20	31	30	43	25	26
E. Retelling											
Total E	0	27	0	0	13	0	0	0	0	0	3
F. Failing to Comprehend											
Total F	8	0		0	0	0	5	4	0	4	3
Total Percentages	100	100	100	100	100	100	100	100	100	100	100

which provided a background of information for the reading of the story. As the analysis of unaided recalls (described later) indicates, accuracy of comprehension was generally not affected by failure to comprehend.

An examination of sub-categories within Category D provides further insight into the comprehension process. Table 1 indicates that Category D1-Predicting, accounted for 24% out of 26% of responses in Category D. This result shows that the subjects generally did not revise or confirm predictions orally. Usually their predictions appeared accurate so that revision or confirmation were often unnecessary. Lack of revising and confirming strategies may have been partly due to the use of literary discourse (chosen because of its familiarity for most Grade 4 children) rather than informative, persuasive, or self-expressive discourse.

In summary, these results indicate that the subjects constructed a great deal of the meaning which they derived from the story. They used (a) the information in the story, (b) their purpose(s) for reading, and (c) pertinent background in order to predict and infer. In other words, each subject "remade" the meaning of the story rather than "taking on" the meaning of the story.

Characteristics of Two Groups of Readers

On the basis of the findings in Table 1, two major response patterns among the subjects were identified. Response patterns of Subjects 1, 3, 4, 6, 7, 8, 9, and 10 were identified as Group 1 and response patterns of Subjects 1 and 5 were identified as

Group 2. The response patterns of these groups differed in three important ways: percentage use of Category A-Extending beyond given information, Category D-Reducing alternatives for continued story action, and Category E-Retelling. These differences are presented in Figure 2.

Use of Categories A and D.

The researcher observed that a major difference in responses was the way in which subjects created meaningful extensions to the story at any given point. In responses identified as Category D, subjects decided among alternatives which answer the question, "What will happen next?"

e.g., O boy! He's just said, "Hand him $200.00" and he's rather scared 'cause Mr. Paddock's probably bigger than he is--he's probably going to give--he's probably going to get $200.00--'cause he doesn't want to suffer the consequences.

This response to the story-line can be characterized as linear extension. See Figure 3 for a graphic depiction of this concept. As the arrows in Figure 3 indicate, subjects constructed their own meanings within the confines of action that was occurring at a particular point in the story.

In responses identified as Category A, subjects filled out what the text provided, considered implications of a character's actions (often in relation to self) and searched for insight into a character's attitudes and emotions.

e.g., I think that Almanzo is--that his father trusts Almanzo a lot, that he's giving him the choice of what he wants--that he's letting him pick what he wants to be.

Figure 2

Response Trends of Group 1 Compared to Group 2

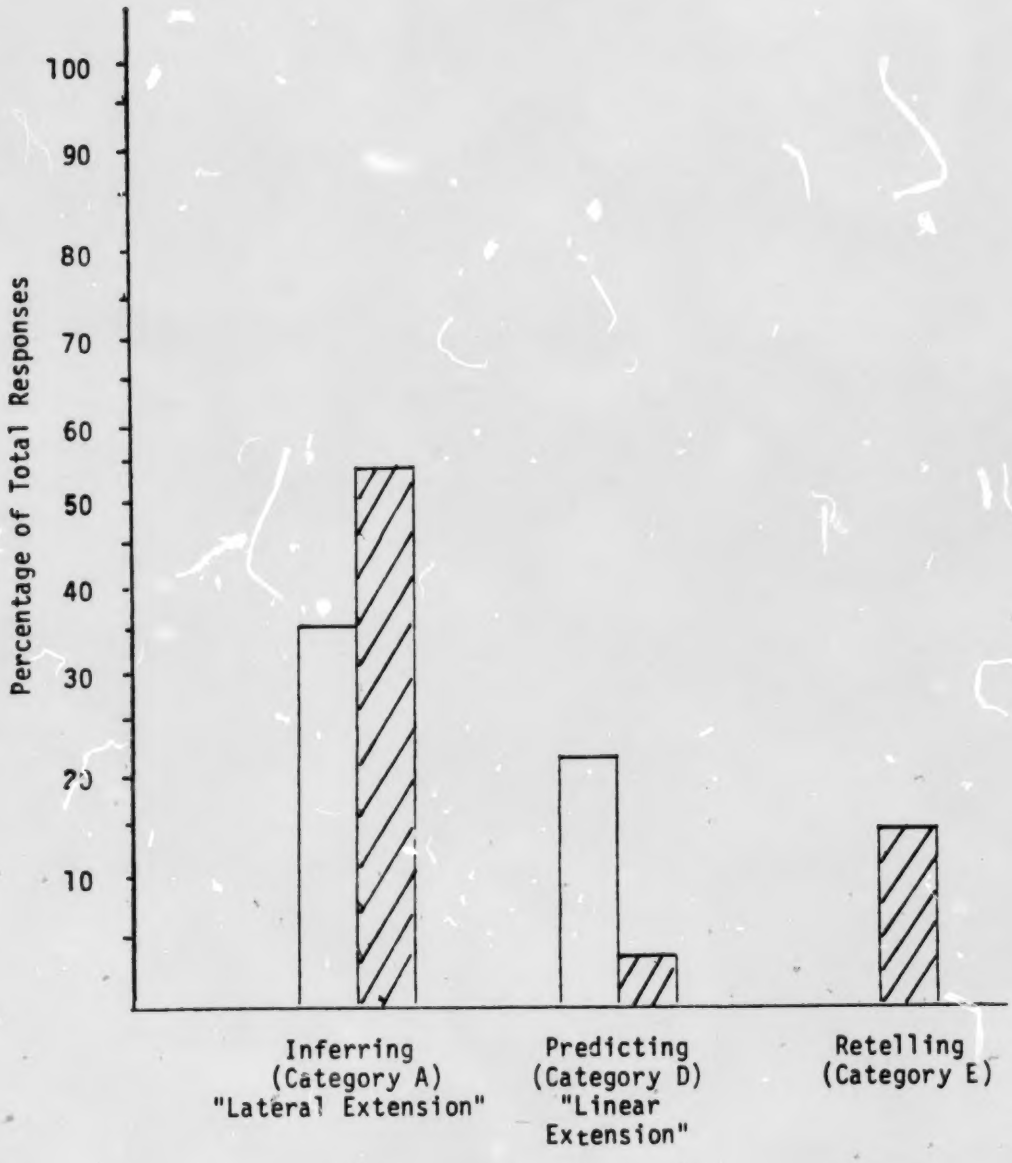
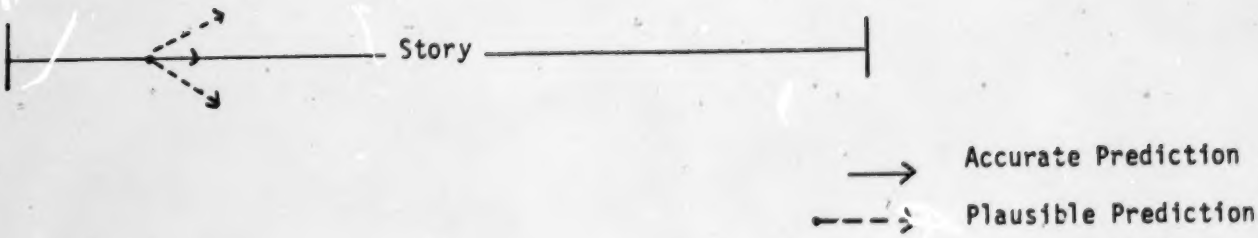


Figure 3

Linear Extension



Such responses are characterized as lateral extension. See Figure 4 for a graphic depiction of this concept. In figure 4, the arrows indicate that subjects inferred at a given point in the story in relation to elements other than plot. These inferences included information that was related to the story but not in the story itself. Thus, each subject fleshed out the author's message in a personal way.

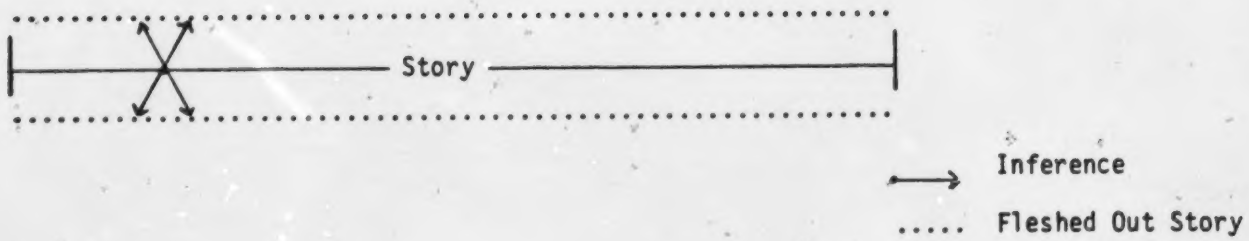
Figure 2 shows that lateral extension was the primary response of each group. However, percentage use of lateral extension by each Group 2 member was higher than for any member of Group 1. In contrast, linear extension was almost nonexistent in Group 2 whereas members of Group 1 used the strategy 15% to 43% of the time. Therefore, Group 1 can be referred to as the Linear-Lateral Group; Group 2 can be named the Lateral Group.

Use of Category E.

A second differentiating feature appeared to be the use of Category E-Retelling by the Lateral Group as opposed to Linear-Lateral Group who never used the strategy. This difference seems to be important when the nature of reading instruction is considered. Retelling is a "learning to read" strategy whereas the other strategies involve "reading to learn," i.e., reading with purpose. Children often enjoy retelling a story--a television episode, a movie, a book--to an appreciative audience. The purpose for this activity is sharing the information and reliving the story through the retelling. However, this purpose is not evident when a subject pauses at a juncture in the story and paraphrases or summarizes major action. The use of retelling

Figure 4

Lateral Extension



in this situation could indicate more emphasis on "taking on" the author's meaning than a personal "remaking" of the author's meaning by a reader.

However, since retelling in answer to factual questions is an expected skill in many reading classes, the Lateral Group may have assumed that retelling was an expected response for protocol analysis even though the researcher instructed each child to simply "tell what you are thinking". The only conclusion that can be reached about the use of retelling as a comprehension strategy is that it requires further study.

Comparison of Response Patterns of

One Typical Member From Each Group

Sample protocols from one typical member of each group were chosen because they exemplify the general trends identified for each group. However, the striking feature of these protocols is each subject's use of information from the same passage for different comprehension at most of the dots. Each reader decided what information was relevant to him/her. The decision was personal.

Dot	Linear-Lateral Group Number 10	Category	Lateral Group Number 2	Category
2	I was thinking that Almanzo (whatever his name is) would get tired from all of it, just standing there telling Bess to go and telling Bess to stop.	B3	Well, Almanzo's father must have been really strong because he could lift 250 pounds.	A1
5	I think that, when he, when the man said that he was smart and his dad didn't take the money for the hay and let him-that Almanzo count it for himself-I think that it-I think that he would think himself real big and start blabbling it all over town and maybe losing some of his friends blabbing about all that.	A1	Almanzo is very smart because they were going to take bales of hay for $2.00 so he told the liveryman $2.25 and he said he wouldn't pay a penny over $2.00. So if he had said $2.00 he probably would have gotten something about 75c.	A1
8	I thought Almanzo was so mad that he would just hit Mr. Thompson so hard that he would start to bawl.	D1	Mr. Thompson gave Almanzo back a nickel for giving back his pocketbook.	E
11	I think that um Almanzo would give the guy that kinda made Mr. Thompson give the money-you would think he would give some money to thank that guy for giving some money for him.	A2	I think Almanzo's father is rather kind because Almanzo thought his father wouldn't let him keep the money but he did-he got to keep it.	A2

Dot	Linear-Lateral Group Number 10	Category	Lateral Group Number 2	Category
14	I think that when he was so tired and exhausted from everything-I think he would suddenly fall asleep or faint or something.	D1	I think they're gonna give Almanzo a job soon 'cause he has so much money.	A1
17	I think that when he was choking he would throw up or get real sick.	A1	Almanzo's mother knew um that something was on. His father was asking him questions and he was answering them but she still didn't know what was going on.	A2

Summary of Findings of Protocol Analysis

The proficient readers in this study constructed much of the meaning of the author's message rather than receiving the words on the page in a cognitively simple and uniform way.

1. They used the story information while they were reading in order to create predictions (linear extensions) and inferences (lateral extensions). Thus, Categories A, B, and D accounted for 82% of the total responses.

Category C-Using background information, was used as a rationale for linear and lateral extension. Its inclusion would bring the total for creative or "constructive" responses to 94%.

2. Category E-Retelling of story events as an isolated strategy was never used by Linear-Lateral Group which represented the great majority of the subjects. This was the only strategy that did not appear to serve any cognitive function in the protocol analysis situation. Lateral Group, who did restate portions of the discourse, also made the highest percentage of inferences but fewer predictions. Thus, they responded more to the opportunities for lateral extension than for linear extension. The relationship of retelling to other comprehension strategies needs to be further investigated.

3. Each subject restructured the same story information in a way that was personally meaningful. This was indicated by the diversity of responses in the protocols, even when responses among subjects fell into the same general category.

Findings of Unaided Recalls and Probing Questions

1. The unaided recalls provided information on the accuracy

of literal sequential recall only. The literal responses appeared to be predetermined by the instruction "Tell me the story as if you were telling it to a friend." These proficient readers were generally accurate in their recall of story information.

2. To answer a character analysis question, "What was _____(name of character) like?" (Goodman & Burke, 1972, page 24), subjects used strategies they had previously used in protocol analysis, particulary inferring. However, a major reason for the frequent use of inferential responses was thought to be the inferential nature of the question. e.g., What was Father like?

A1 He smiled but he never laughed 'cause all he did was have a twinkle in his eyes! He had a funny--a funny twinkle.

What was Mr. Thompson like?

A2 He was greedy. He was selfish.

C1 Just like that man that was on--you know, Crachet and Mr. - That man that always said, "Humbug!"

3. In answer to a plot question, "What was the problem the story was trying to solve?" (Goodman & Burke, 1972, page 24), subjects identified three major problems:

a. Would Almanzo choose to be an apprentice or a farmer?

b. Would Almanzo find Mr. Thompson and give the money back?

c. Should a problem be solved by fighting?

Most often, statements were confined to story elements although several subjects generalized their interpretations of story elements to real world situations.

e.g., People. . .should come right out with what they want. . .if they don't say, they're not on their way to getting it.

4. In response to a theme question, "What do you think the story was trying to tell you?" (Goodman & Burke, 1972, page 24), most of the children expressed a personal meaning in relation to (a) their purpose for reading or (b) a universal value. Each child constructed a slightly different personal meaning.

e.g.,

a. Well, I think it told me about how rough it was in pioneer days and that it's--it's just kind of hard to leave home sometimes to work and raise a family. . .

b. Stand up for what you want to be even if someone wants you to be something--what you want to be.

The findings of probing questions showed the same trend as the protocols. Again, each subject personally "remade" the meaning of the story rather than "taking on" the meaning of the story.

Implications for Theory, Instruction, and Research

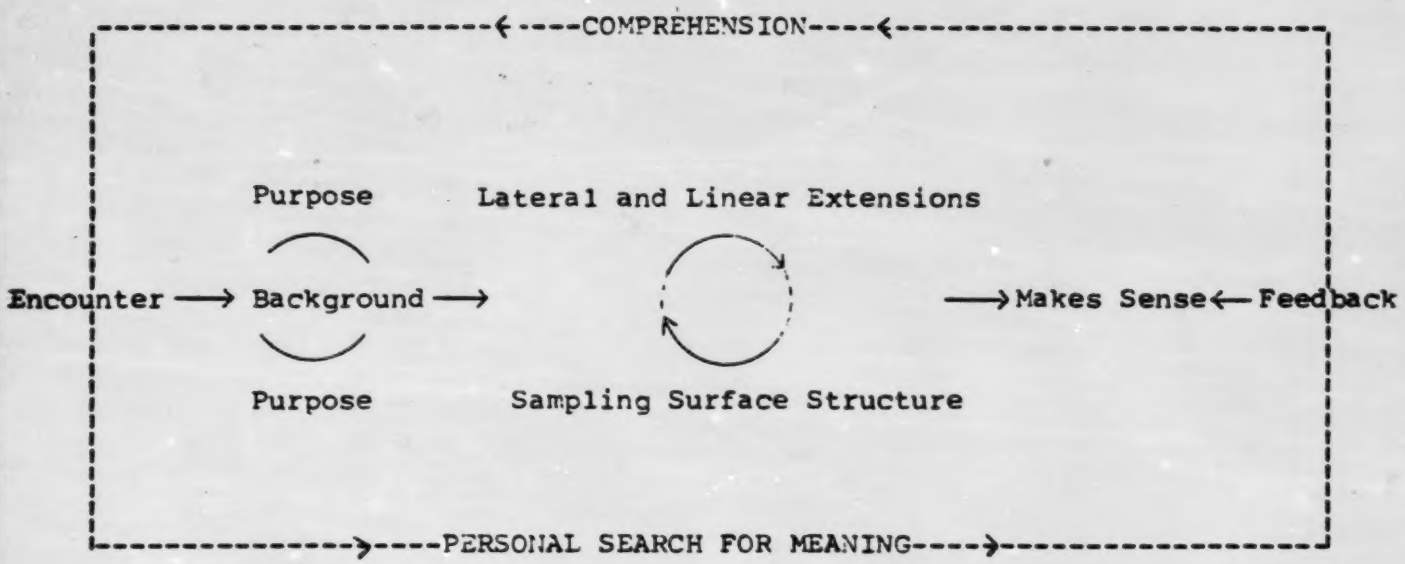
Theory

In light of the findings, Figure 1 was revised. The relationship of essential elements of the comprehension process identified in the theoretical framework and used by the proficient readers in this study are included in Figure 5.

Figure 5 shows that subjects created meaning when they read

Figure 5

Model of the Comprehension Process in Reading



by using two related strategies, linear extension and lateral extension. In contrast, Figure 1 identified prediction, i.e., linear extension as the only way to construct meaning as the reader samples surface structure.

The subjects' responses also indicated that they used personal and instructional background, and purpose for reading to create linear and lateral extensions. These findings correspond to the theoretical framework described in the Review of Literature and diagrammed in Figure 1. However, the subjects' unique responses emphasized the personal nature of the search for meaning as diagrammed in Figure 5.

Further information was gained during the study regarding the personal nature of the comprehension process. The teacher designed the instructional environment so that subjects could use the elements of the comprehenion process in a sequential way. However, subjects determined whether to use instructional prodedures as the teacher intended. For example, instructional prodecures that provided background for some subjects were used as the encounter by others (even though an initial encounter exprience had been provided). At no point did the teacher appear to be in control of the comprehension process for any subject. In Figure 1, the encounter was separated from the remainder of the process because the researcher considered it an initiating experience only. In Figure 5, the encounter is an integral part of the reader's comprehension process. There may be many encounters involved in the search for meaning, hence the cyclical nature of the model.

Instruction

Two findings in this study suggest that teachers should adopt a responding role much more frequently as compared to their traditional role as the structurer of learning experiences. First, the use of linear and lateral extension strategies in protocol analysis indicated that it was natural for the proficient readers to construct meaning while reading, i.e., to use the higher levels of cognition in the absence of questions to direct their thinking. Second, it was shown that a teacher may try to structure an instructional experience to compliment the nature of the comprehension process but each subject appeared to use the information in his/her own way.

In a responding role, the teacher would serve as a resource person who is aware of the various experiences and materials that are available. The teacher would provide opportunities for active involvement on the part of the children by responding to questions, ideas, and concerns. In short, the teacher would often depend on the children to determine suitable roles for him/her.

For example, teachers often ask questions to receive feedback on the effectiveness of a child's comprehension. Two alternate feedback procedures were employed at the end of the inquiry. First, subjects discussed which era (pioneer or present) they would prefer to live in. They agreed that they would enjoy "visiting" pioneer Alberta but considered that they were accustomed to too many conveniences to enjoy pioneer life for long. Subsequently, on their own initiative they wrote and produced the play, "The Life of Pioneer Children." It was evident

during planning and practise sessions that the children considered staging, costumes, props, role types, action and dialogue in terms of knowledge gained during the instructional plan and that this functional use refined and developed that knowledge. They also used other sources of knowledge, such as how to write a play. The teacher listened to the children, participated in discussions, provided materials, and shared several suggestions for staging the play.

These ideas for receiving feedback by responding to the children complement the nature of the comprehension process because they provide for the children's involvement in choosing a project that is interesting and purposeful to them. Also, the presentation (or performance) provides a linguistic and social purpose for sustained involvement. Each child benefits from the knowledge which the others share. The teacher benefits too, because he/she receives input, e.g., for evaluation, from each individual in the class. In short, such feedback procedures allow children to structure their own learning to a much greater extent than is otherwise possible. Because individual participation is enhanced, evaluation of the learning of a particular child could be more profitable for both teacher and child than many traditional questioning procedures.

Research

As the research progressed, a major implication for further research became evident. Longitudinal, ethnographic research appears to be necessary to gain further insight into the nature of the comprehension process. In this study, the use of protocol

analysis and probing questions provided insight concerning the strategies which the proficient readers used to comprehend a story. However, protocol analysis did appear to affect the continuity of the process. A more natural way of obtaining information concerning the comprehension process would be to observe how children consistently use information from their reading over a period of time. The use of classroom feedback procedures for research could also yield practical information for instructional planning by teachers.

Although an instructional environment was an integral part of this study, the researcher used another teacher's classroom to carry out the two-week plan which was isolated from other classroom studies. Researchers should observe children in their natural context because the comprehension process of each child operates within that context. The events of the entire school day require the child to make sense of new experiences in relation to his/her background experiences. Reading in a functional language framework is one way that the child can make sense of his/her experiences. Trying to study reading outside of this natural context, particularly trying to "control" or eliminate factors that affect it, could seriously jeopardize the validity of the data that would be collected and the conclusions that would be drawn.

Related research should focus on how the child structures meaning as he/she reads and how certain factors such as classroom environment, ability, type of discourse, etc. affect that process. Several possible topics follow:

1. "What comprehension strategies do proficient readers use?" is a question that needs more attention. For example, further study is required to determine if linear and lateral extensions, the two major response types, (discovered among the subjects in this study) would be discovered in other or larger populations. Further study is also required to test the validity and completeness of the category system of comprehension strategies developed from an analysis of subject's responses in protocols.

2. Studies of the developmental aspect of children's use of comprehension strategies would be of major importance.

3. Comparing the comprehension strategies which develop among students in various classroom environments would also be of major importance.

4. Strategies used by children of differing abilities, e.g., proficient and non-proficient readers, low and high IQ's, etc., could be compared.

5. Strategies used by children to read different kinds of discourse, e.g., informative, persuasive, narrative, etc., could be examined.

Concluding Statement

Children were a major source of information in this study. They appeared to use instructional experiences, relevant personal experiences, purposes for reading and information in the story as springboards for higher level cognition, i.e., lateral and linear extensions. Thus, each child confronted the reading experience in his/her own way and "remade" the meaning in accordance with what was personally relevant.

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